

**As Per NEP 2020**

**Tolani College of  
Commerce  
(Autonomous)**



Knowledge is Supreme

**Title of the Course: Wonders of the Living World- II (Animals)**

**Name of the Programmes:**

1. Bachelor of Commerce (Management Studies)
2. Bachelor of Commerce (Accountancy & Finance)
3. Bachelor of Commerce (Banking & Insurance)
4. Bachelor of Commerce (Financial Markets)
5. Bachelor of Science (Information Technology)

**Semester II**

**Syllabus for 4 Credit Course**

**From the academic year- 2024-2025**

## Name of the Course: Wonder of the Living World- II (Animals)

Sr. No.	Heading	Particulars
1	<b>Description the course:</b>	The course is an introductory to the world of animals. It the offer insights into the evolution, classification as well as behavior of animals. It also discusses the role of animals in ecosystem.
2	<b>Vertical:</b>	Open Electives
3	<b>Type:</b>	Theory
4	<b>Credit:</b>	4 credits
5	<b>Hours Allotted:</b>	60 Hours
6	<b>Marks Allotted:</b>	100 Marks Continuous Evaluation 40 Marks Semester End Examination 60 Marks
7	<b>Course Objectives:</b> By end of this course learners should be: <ol style="list-style-type: none"> <li>1. introduced to the world of animals</li> <li>2. able to understand the behavior traits of animals</li> <li>3. able to understand adaptations in animals</li> <li>4. able to understand the role of animals in environment</li> </ol>	
8	<b>Course Outcomes:</b> The learners shall be able to: <ol style="list-style-type: none"> <li>1. Understand the evolution of animals</li> <li>2. appreciate the intelligence in animals</li> <li>3. appreciate the survival instincts in animals</li> <li>4. appreciate the role of animals as indicator species</li> </ol>	

9	<p><b>Module 1: Introduction to the world of animals (15 Hours)</b></p> <ol style="list-style-type: none"> <li><b>Know the animals:</b> Definition, Characteristics, Evolution</li> <li><b>Animal Classification:</b> Seven Phylum; Class-level classification of Phylum Chordata; Concept of Genus and species</li> <li><b>Animal Procreation:</b> Need for procreation; Sexual and Asexual reproduction, Vivipary and Ovipary</li> </ol> <p><b>Module 2: Animal behaviour (15 Hours)</b></p> <ol style="list-style-type: none"> <li><b>Courtship:</b> Definition; Forms/ Types of courtship behaviours- Songs, Plumages, Display of body part, Ornamentation, Structures</li> <li><b>Animal migration:</b> Definition; Reasons for migration; Cues for migration; Migration Corridors;</li> <li><b>Animal Architecture:</b> Definition; Reasons for building shelter- Resting, Nesting, Social animal like ants, termites, bees and wasp</li> </ol> <p><b>Module 3: Adaptations in animals (15 Hours)</b></p> <ol style="list-style-type: none"> <li><b>Adaptations for extreme conditions:</b> Heat and Cold; Depth, Speed, Flight, Swimming</li> <li><b>Camouflage:</b> Definition; Need for camouflage; Types of camouflage- concealing coloration, disruptive coloration, disguise and mimicry</li> <li><b>Specialised adaptation:</b> Echolocation, Electric discharge, Sensory organs, Magnetic sense</li> </ol> <p><b>Module 4: Role of animals (15 Hours)</b></p> <ol style="list-style-type: none"> <li><b>Animal associations:</b> Definition; Types- Symbiosis, Parasitism, Mutualism, Competition, Commensalism, Predation</li> <li><b>Animal as indicators:</b> Water quality; Climate change, Environmental degradation</li> <li><b>Animal biogeography:</b> Definition; Concept of biomes; Endemic, Native and Invasive animals</li> </ol>
10	<p><b>Reference Books:</b></p> <ol style="list-style-type: none"> <li>Alcock J. 2013. Animal Behaviour, Sinauer Associate Inc., USA.</li> <li>Barnes R. S. K. - The Diversity of Living Organisms; Blackwell Science</li> <li>Chaki K C; Kundu G &amp; Sarkar S. - Introduction to General Zoology (Vol. 1), NCBA, Kolkata</li> <li>Chattopadhyay S. 2012. Life: Evolution, Adaptation, Ethology. 3rd Edn. Books and Allied, Kolkata.</li> <li>Cunningham, W.P., Cooper, T.H., Gorhani, E and Hepworth, M.T. 2001. Environmental Encyclopedia, Jaico Publ. House, Mumbai, 1196p.</li> <li>Darlington PJ. The Geographical Distribution of Animals, R.E. Krieger Pub Co</li> <li>Drickamer LC, Vessey SH. 2001. Animal Behaviour. McGraw-Hill</li> <li>Dujatkin LA. 2014. Principles of Animal Behaviour. 3rd Edn. W.W.Norton and Co.</li> <li>Freedman B. 1989. Environmental Ecology. Academic press, Inc</li> <li>Hyman LH. 1951. The Invertebrates (Vol-I). Mc.Graw Hill Book Company.</li> <li>Jordan EL, Verma PS. 2006. Invertebrate Zoology. S. Chand &amp; Com. New Delhi.</li> <li>Sinha KS, Adhikari S, Ganguly BB. 2001. Biology of Animals. Vol. II. NCBA</li> <li>Young JZ. 2004. The Life of Vertebrates. III Edition. Oxford University press</li> </ol>

<b>11</b>	<b>Other Readings:</b> <ol style="list-style-type: none"><li>1. Erach Bharucha. 2005. Text book of Environmental Studies for undergraduate courses, University Grants Commission, New Delhi</li><li>2. <a href="https://www.sciencedirect.com/science/article/pii/S0960982221013506">https://www.sciencedirect.com/science/article/pii/S0960982221013506</a></li><li>3. <a href="https://www.smithsonianmag.com/science-nature/the-top-10-greatest-survivors-of-evolution-118143319/">https://www.smithsonianmag.com/science-nature/the-top-10-greatest-survivors-of-evolution-118143319/</a></li><li>4. <a href="https://www.newscientist.com/article/dn17453-timeline-the-evolution-of-life/">https://www.newscientist.com/article/dn17453-timeline-the-evolution-of-life/</a></li></ol>
<b>12</b>	<b>Websites:</b> <ol style="list-style-type: none"><li>1. <a href="https://education.nationalgeographic.org/resource/migration/">https://education.nationalgeographic.org/resource/migration/</a></li><li>2. <a href="https://education.nationalgeographic.org/resource/natures-most-impressive-animal-migrations/">https://education.nationalgeographic.org/resource/natures-most-impressive-animal-migrations/</a></li><li>3. <a href="https://www.nature.com/scitable/knowledge/library/animal-migration-13259533/">https://www.nature.com/scitable/knowledge/library/animal-migration-13259533/</a></li><li>4. <a href="https://zsi.gov.in/">https://zsi.gov.in/</a></li><li>5. <a href="https://wii.gov.in/">https://wii.gov.in/</a></li><li>6. <a href="https://naturalhistory.si.edu/education/teaching-resources/life-science/explore-animal-adaptations">https://naturalhistory.si.edu/education/teaching-resources/life-science/explore-animal-adaptations</a></li><li>7. <a href="https://www.audubon.org/">https://www.audubon.org/</a></li><li>8. <a href="https://sci.waikato.ac.nz/evolution/AnimalEvolution.shtml">https://sci.waikato.ac.nz/evolution/AnimalEvolution.shtml</a></li><li>9. <a href="https://naturalhistory.si.edu/education/teaching-resources/life-science/early-life-earth-animal-origins">https://naturalhistory.si.edu/education/teaching-resources/life-science/early-life-earth-animal-origins</a></li><li>10. <a href="https://www.sciencefocus.com/nature/animal-architects">https://www.sciencefocus.com/nature/animal-architects</a></li></ol>

<b>13</b>	<b>Internal Continuous Assessment: 40%</b>	<b>Semester End Examination : 60%</b>		
<b>14</b>	<b>Continuous Evaluation through:</b>	1. Fieldwork-based project work and report or assignment or presentation or report-writing or article/ book review or topic-based activity	15 marks	
		2. Fieldwork-based project work and report or assignment or presentation or report-writing or article/ book review or topic-based activity	15 marks	
		3. MCQ Based Test	10 marks	
		<b>Total</b>	<b>40 marks</b>	
<b>15</b>	<b>Format of Question Paper:</b>			
		Question Number	Nature of Questions	Maximum Marks
		1)	Attempt any THREE of the following: (From Module I)	15
		A.		
		B.		
		C.		
		D.		
		2)	Attempt any THREE of the following: (From Module II)	15
		A.		
		B.		
		C.		
		D.		
		3)	Attempt any THREE of the following: (From Module III)	15
		A.		
		B.		
		C.		
		D.		
		4)	Attempt any THREE of the following: (From Module IV)	15
		A.		
		B.		
		C.		
		D.		

### Signatures of Team Members

Sr.No	Name	Signature
1.	Mr. Kaustubh Bhagat	